

December 22, 2016



U.S. Department  
of Transportation

East Building, PHH-30  
1200 New Jersey Avenue S.E.  
Washington, D.C. 20590

**Pipeline and Hazardous  
Materials Safety Administration**

DOT-SP 20292  
(FIRST REVISION)

**EXPIRATION DATE: 2018-10-31**

(FOR RENEWAL, SEE 49 CFR 107.109)

1. GRANTEE: NUANCE SYSTEMS LLC  
PORTLAND, OR
2. PURPOSE AND LIMITATIONS:
  - a. This special permit authorizes the manufacture, mark, sale and use of non-DOT specification cylinders constructed in accordance with the DOT 4B cylinder specification except as specified herein, for the transportation in commerce of the materials authorized by this special permit. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
  - b. The safety analyses performed in development of this special permit only considered the hazards and risks associated with transportation in commerce. The safety analyses did not consider the hazards and risks associated with consumer use, use as a component of a transport vehicle or other device, or other uses not associated with transportation in commerce.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR §§ 173.181, 173.187, 173.201, 173.211, and 173.302(a) in that non-DOT specification cylinders are not authorized except as specified herein.

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5. BASIS: This special permit is based on the application of NUANCE SYSTEMS LLC dated July 28, 2016, submitted in accordance with § 107.105 and the public proceeding thereon and additional information dated November 18, 2016.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

Hazardous Material Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Argon, compressed	2.2	UN1006	N/A
Compressed gas, n.o.s	2.2	UN1956	N/A
Corrosive liquid, basic, inorganic, n.o.s.	8	UN3266	I
Corrosive liquid, basic, organic, n.o.s.	8	UN3267	I
Corrosive solid, basic, inorganic, n.o.s.	8	UN3262	I
Corrosive solid, basic, organic, n.o.s.	8	UN3263	I
Helium, compressed	2.2	UN1046	N/A
Nitrogen, compressed	2.2	UN1066	N/A
Pyrophoric liquid, inorganic, n.o.s	4.2	UN3194	I
Pyrophoric liquids, organic, n.o.s	4.2	UN2845	I
Pyrophoric solid, inorganic, n.o.s.	4.2	UN3200	I
Pyrophoric solids, organic, n.o.s.	4.2	UN2846	I

7. SAFETY CONTROL MEASURES:

a. PACKAGING - Prescribed packaging is a steel 1.2 liter non-DOT specification cylinder. Several design variations are authorized. The drawings for all variations are on file with the Office of Hazardous Materials Safety Approvals and Permits Division. Cylinders must conform with all regulations applicable to DOT Specification 4B cylinders (§§178.35 and 178.50) except as follows:

*§ 178.35(e) Safety Devices.* Cylinders must not be fitted with a pressure relief device due to the highly reactive nature of pyrophoric material.

*§ 178.50(a) Type, size, and service pressure.* The cylinder is a welded or brazed steel cylinder with water capacity (nominal) not over 1,000 pounds and a service pressure of at least 175 but not over 350 psig. Cylinders closed in by spinning process are not authorized.

*§ 178.50(d) Manufacture.*

(1)The cylinder head with openings may be attached by bolts and gasket.

(2)The cylinder may be constructed without a longitudinal weld.

*§ 178.50(f) Wall thickness.* All cylinders must have a wall thickness of at least 0.246 inch.

*§ 178.50(h) Openings in cylinders.*

ADD: (3) Each completed cylinder must have a helium leak test to  $5 \times 10^{-8}$  cc/sec without evidence of leakage.

*§ 178.50(i) Hydrostatic test.*

ADD: (5) One finished cylinder must be hydrostatically pressure tested to 4 times the marked service pressure without bursting.

*§ 178.50(j) Flattening test.* Not applicable.

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*§ 178.50(k) Physical test.*

(1) The test is required on 2 specimens, taken at random, cut from either: 1 cylinder, material lot starting stock, or part thereof, heat treated as required.

(2) \*\*\*

(3) \*\*\*

*§ 178.50(l) Acceptable results for physical tests.* An elongation of at least 40 percent for a 2-inch gauge length or at least 20 percent in other cases and yield strength not over 73 percent of tensile strength.

*§ 178.50(m) Rejected cylinders.* Cylinders must pass all prescribed tests to be acceptable.

*§ 178.50(n) Markings.*

In lieu of the DOT specification marking, each cylinder must be marked "DOT-SP 20292" followed by the service pressure. \*\*\*

b. TESTING - Each cylinder must be visually inspected and pressure tested (using liquid or gas media) every 5 years in accordance with §180.209 as prescribed for DOT-4B cylinders using the proof pressure method to 2 times the marked service pressure.

(1) Visual inspection shall be in accordance with CGA pamphlet C6 - Standard for Visual Inspection of Steel Compressed Gas Cylinders.

(2) Visual inspection of the inside diameter of the cylinder required if the head is removed, or if there is an indication that the cylinder had contained a hazardous material that will adversely react with the cylinder (e.g. chemical stress corrosion).

(3) Additional, if the cylinder head leaks (i.e., inlets, outlets, fill port and valves), cylinder must be returned to the manufacture (M5900) for repair prior to continued used.

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(4) Only replacement of cylinder head gaskets and bolts is allowed. Cylinder must have a helium leak test to  $5 \times 10^{-8}$  cc/sec without evidence of leakage after re-assembly.

(5) Valve part replacement allowed using manufacture replacement parts only.

c. **MARKING:** Each package, and overpack if used, transported under the provisions of this special permit must be plainly marked "DOT-SP 20292".

8. SPECIAL PROVISIONS:

a. In accordance with the provisions of Paragraph (b) of § 173.22a, persons may use the packaging authorized by this special permit for the transportation of the hazardous materials specified in paragraph 6, only in conformance with the terms of this special permit.

b. A person who is not a holder of this special permit, but receives a packaging covered by this special permit, may reoffer it for transportation provided no modification or change is made to the packaging and it is offered for transportation in conformance with this special permit and the HMR.

c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

d. Each packaging manufactured under the authority of this special permit must be either (1) marked with the name of the manufacturer and location (city and state) of the facility at which it is manufactured or (2) marked with a registration symbol designated by the Office of Hazardous Materials Special Permits and Approvals for a specific manufacturing facility.

e. A current copy of this special permit must be maintained at each facility where the packaging is manufactured under this special permit. It must be made available to a DOT representative upon request.

9. MODES OF TRANSPORTATION AUTHORIZED: Cargo vessel, rail freight, or motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this special permit

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must be carried aboard each cargo vessel, or motor vehicle used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
- o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 - Immediate notice of certain hazardous materials incidents, and 171.16 - Detailed hazardous

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materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for William Schoonover  
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Materials Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at [http://hazmat.dot.gov/sp\\_app/special\\_permits/spec\\_perm\\_index.htm](http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm) Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Andrew Eckenrode